

WHAT IS CLAIMED IS:

1. An information recording medium which has
a plurality of sector fields that record data, and in
which a block is defined by a set of a predetermined of
5 sector fields,

wherein each sector field has an identification
information area for storing one of first identifica-
tion information indicating that data is recorded with
a first integrity level, and second identification
10 information indicating that data is recorded with a
second integrity level lower than the first integrity
level.

2. A medium according to claim 1, wherein the
identification information areas of sector fields
15 included in one block consistently store one of
the first identification information and second
identification information.

3. A medium according to claim 1, wherein the
identification information area can be independently
20 reproduced irrespective of an error correction process
using an error correction code included in ECC block
data recorded in the block.

4. A medium according to claim 1, wherein the
sector field includes a recording field which records
25 user data, and a header field which records address
data,

the recording field includes the identification

information area,

when ECC block data is recorded in the block,
a predetermined number of sector data generated based
on the ECC block data are recorded in a predetermined
5 number of recording fields included in the block to
have one-to-one correspondence therebetween,

the ECC block data includes block data, a first
error correction code, and a second error correction
code,

10 the block data includes predetermined data which
are arranged along a first direction and a second
direction perpendicular to the first direction,

the first error correction code corrects the
predetermined data arranged along the first direction,

15 the second error correction code corrects the
predetermined data arranged along the second direction,

the sector data includes a part of the block data
broken up into the predetermined number of data, a part
of the first error correction code corresponding to the
20 part of the block data, and a part of the second error
correction code broken up into the predetermined number
of data, and

the identification information area can be
independently reproduced irrespective of an error
25 correction process using the first and second error
correction codes.

5. An information recording apparatus for

recording information on an information recording
medium which has a plurality of sector fields that
record data and respectively have identification
information areas, and in which a block is defined by
5 a set of a predetermined of sector fields, comprising:

recording means for recording, in the identifica-
tion information area, first identification information
indicating that data is recorded with a first integrity
level when desired information is recorded with the
10 first integrity level on said information recording
medium, and recording, in the identification informa-
tion area, second identification information indicating
that data is recorded with a second integrity level
when desired information is recorded with the second
15 integrity level on said information recording medium.

6. An apparatus according to claim 5, further
comprising recording means for, when desired
information is recorded with the first integrity level
in a predetermined block, consistently recording,
20 in the identification information areas of sector
fields included in the predetermined block, the first
identification information indicating that data is
recorded with the first integrity level, and for,
when desired information is recorded with the second
25 integrity level in a predetermined block, consistently
recording, in the identification information areas of
sector fields included in the predetermined block,

the second identification information indicating that data is recorded with the second integrity level.

7. An apparatus according to claim 6, further comprising recording means for, when desired
5 information is to be recorded in a predetermined sector field included in a predetermined block with the first or second integrity level, determining one of the first and second integrity levels as an integrity level of actual recording on the basis of the relationship
10 between the integrity level of the information to be recorded, and the integrity level indicated by identification information reproduced from the identification information areas of sector fields included in the predetermined block as a recording
15 destination, consistently recording the first identification information in the identification information areas of the sector fields included in the predetermined block when the integrity level of actual recording is determined to be the first
20 integrity level, and consistently recording the second identification information in the identification information areas of the sector fields included in the predetermined block when the integrity level of actual recording is determined to be the second integrity
25 level.

8. An apparatus according to claim 6, further comprising:

first sector-unit recording means for, when a predetermined block can undergo error correction using an error correction code included therein, and desired information is to be recorded in a predetermined sector field included in the predetermined block with the first or second integrity level, determining one of the first and second integrity levels as an integrity level of actual recording on the basis of the relationship between the integrity level of the information to be recorded, and the integrity level indicated by identification information reproduced from the identification information areas of sector fields included in the predetermined block as a recording destination, consistently recording the first identification information in the identification information areas of the sector fields included in the predetermined block when the integrity level of actual recording is determined to be the first integrity level, and consistently recording the second identification information in the identification information areas of the sector fields included in the predetermined block when the integrity level of actual recording is determined to be the second integrity level;

second sector-unit recording means for, when a predetermined block cannot undergo error correction using an error correction code included therein,

the second identification information is reproduced from the identification information areas of sector fields included in the predetermined block, and desired information is to be recorded in a predetermined sector field included in the predetermined block with the first integrity level, consistently recording the first identification information in the identification information areas of the sector fields included in the predetermined block, recording the desired information in the predetermined sector field included in the predetermined block, and recording dummy information in the sector fields other than the predetermined sector field included in the predetermined block; and

third sector-unit recording means for, when a predetermined block cannot undergo error correction using an error correction code included therein, the second identification information is reproduced from the identification information areas of sector fields included in the predetermined block, and desired information is to be recorded in a predetermined sector field included in the predetermined block with the second integrity level, consistently recording the second identification information in the identification information areas of the sector fields included in the predetermined block, recording the desired information in the predetermined sector field included in the predetermined block, and recording dummy information in

the sector fields other than the predetermined sector field included in the predetermined block.

9. An apparatus according to claim 8, wherein the dummy information is partially corrected data or padding data of 0b for all bits.

10. An apparatus according to claim 6, further comprising determination means for, when different kinds of identification information are reproduced from the identification information areas of a predetermined number of sector fields which belong to an identical block, determining likelihood from those pieces of identification information.

11. An information recording method comprising:
the step of, when desired information is recorded with a first integrity level in an information recording medium which has a plurality of sector fields that record data and respectively have identification information areas, and in which a block is defined by a set of a predetermined of sector fields, recording data in each identification information area with the first integrity level; and

the step of, when desired information is recorded with a second integrity level in the information recording medium, recording data in each identification information area with the second integrity level.

12. A method according to claim 11, further comprising the steps of:

the step of, when desired information is recorded with the first integrity level in a predetermined block of the information recording medium, consistently recording data in the identification information areas of sector fields included in the predetermined block with the first integrity level; and

the step of, when desired information is recorded with the second integrity level in a predetermined block of the information recording medium, consistently recording data in the identification information areas of sector fields included in the predetermined block with the second integrity level.

13. A method according to claim 12, further comprising:

the step of, when desired information is to be recorded in a predetermined sector field included in a predetermined block with the first or second integrity level, determining one of the first and second integrity levels as an integrity level of actual recording on the basis of the relationship between the integrity level of the information to be recorded, and the integrity level indicated by identification information reproduced from the identification information areas of sector fields included in the predetermined block as a recording destination, consistently recording the first identification information in the identification information areas of

the sector fields included in the predetermined block
when the integrity level of actual recording is
determined to be the first integrity level, and
consistently recording the second identification
5 information in the identification information areas
of the sector fields included in the predetermined
block when the integrity level of actual recording is
determined to be the second integrity level.

14. A method according to claim 12, further
10 comprising:

the step of, when a predetermined block can
undergo error correction using an error correction code
included therein, and desired information is to be
recorded in a predetermined sector field included in
15 the predetermined block with the first or second
integrity level, determining one of the first and
second integrity levels as an integrity level of actual
recording on the basis of the relationship between
the integrity level of the information to be recorded,
20 and the integrity level indicated by identification
information reproduced from the identification
information areas of sector fields included in the
predetermined block as a recording destination,
consistently recording the first identification
25 information in the identification information areas of
the sector fields included in the predetermined block
when the integrity level of actual recording is

determined to be the first integrity level, and
consistently recording the second identification
information in the identification information areas of
the sector fields included in the predetermined block
5 when the integrity level of actual recording is
determined to be the second integrity level;

the step of, when a predetermined block cannot
undergo error correction using an error correction code
included therein, the second identification information
10 is reproduced from the identification information areas
of sector fields included in the predetermined block,
and desired information is to be recorded in a prede-
termined sector field included in the predetermined
block with the first integrity level, consistently
15 recording the first identification information in the
identification information areas of the sector fields
included in the predetermined block, recording the
desired information in the predetermined sector field
included in the predetermined block, and recording
20 dummy information in the sector fields other than the
predetermined sector field included in the predeter-
mined block; and

the step of, when a predetermined block cannot
undergo error correction using an error correction code
25 included therein, the second identification information
is reproduced from the identification information areas
of sector fields included in the predetermined block,

and desired information is to be recorded in a predetermined sector field included in the predetermined block with the second integrity level, consistently recording the second identification information in the identification information areas of the sector fields included in the predetermined block, recording the desired information in the predetermined sector field included in the predetermined block, and recording dummy information in the sector fields other than the predetermined sector field included in the predetermined block.

15. A method according to claim 14, wherein the dummy information is partially corrected data or padding data of 0b for all bits.

16. A method according to claim 12, further comprising the step of, when different kinds of identification information are reproduced from the identification information areas of a predetermined number of sector fields which belong to an identical block, determining likelihood from those pieces of identification information.

17. An information reproduction apparatus for reproducing information from an information recording medium which has a plurality of sector fields that record data, and in which each sector field has an identification information area that records one of first identification information indicating that data

is recorded with a first integrity level, and second identification information indicating that data is recorded with a second integrity level lower than the first integrity level, and a block is defined by a set of a predetermined number of sector fields, comprising:

reproduction means for acquiring information that pertains to integrity by reproducing the first identification information or second identification information from the identification information area.

18. An information reproduction method for reproducing information from an information recording medium which has a plurality of sector fields that record data, and in which each sector field has an identification information area that records one of first identification information indicating that data is recorded with a first integrity level, and second identification information indicating that data is recorded with a second integrity level lower than the first integrity level, and a block is defined by a set of a predetermined number of sector fields, comprising:

the step of acquiring information that pertains to integrity by reproducing the first identification information or second identification information from the identification information area.